

# INSPECTION REPORT

## GENERAL INFORMATION

Company Name: Lawrence Livermore National Laboratory (LLNL)

Facility Address: 7000 East Avenue  
Livermore, CA 94550

Telephone Number: (925) 424-3321 (Kathy Pandrea)

EPA ID Number: CA2890012584

Facility Type: Research and development laboratory

Regulated Units: Permitted and interim status storage and treatment units.

Waste Streams: Varied laboratory wastes including mixed (radioactive) hazardous wastes

Regulatory Status: The hazardous waste permit, which was issued 7/9/99, provides for the closing of interim status units and replacement with designated permitted units. The designated permitted hazardous waste units are summarized in Table 1 of the permit (Attachment A).

A. The status of the permitted units during the inspection was:

a) Building 280 Container Storage Unit- LLNL stated its intent to remove this unit from the permit in a letter to DTSC dated 4/13/01 (Attachment B). Reportedly, LLNL will implement a permit modification to accomplish this.

b) Area 612 Storage/ Treatment Group- This unit was fully operational. This included storage units in Building 612, Building 614, and Building 625. Units 5 and 10 listed in Table 1 completed their conversion to generator status, as described in Table 1 footnote 5 (Attachment A).

c) The Area 693 Container Storage Unit Group was partly operational:

- 1) Building 693 Container Storage Unit was fully operational.
- 2) Building 693 Annex Classified Waste Storage was reportedly built but not yet operational (not inspected).
- 3) Building 693 Freezer Unit had reportedly not yet been moved to Building 693 (not inspected).
- 4) Building 693 Roll Off Bin Storage was reportedly built but not yet operational (not inspected).

d) Area 695 Storage/ Treatment Unit Group was reportedly very close to completion/ not yet operational.

Numerous class 1 permit modifications were implemented, including approximately 130 modifications included in permit modification packages sent to DTSC dated 6/16/00 (not attached) and 12/22/00 (Attachment C). Note that the Class 1\* modification in the 12/22/2000 package was not approved by DTSC and was reportedly not implemented at the time of the inspection.

B. The interim status units are described in permit Part IV.3. "Temporary Operation of Interim Status Units", which allows the permittee to "continue to operate the following units under authorization of Interim Status until the completion of the construction and activation of the DWTF complex and Building 280 CSU". As DTSC had not responded in writing to the 4/13/01 letter where LLNL stated its intent to remove the Building 280 CSU from the permit (Attachment B), the schedule for cessation of the interim status hazardous waste activities was uncertain at the time of the inspection. The interim status hazardous waste treatment and storage units which were authorized in

accordance with permit Part IV.3 are: Building 233 Container Storage Unit, Building 513 Container Storage Unit, Building 513 Solidification Unit, Building 513 Shredding Unit, Area 514 Waste Water Filtration Unit, Area 514 Waste Water Treatment Tank Farm, Area 514-1 Container Storage Unit, Area 514-2 Container Storage Unit, Area 514-3 Container Storage Unit, Area 514 Quadruple Tank Unit, Area 514-1 Tank Blending Unit, Area 514-1 Portable Blending Unit, Area 514-1 Centrifugation Unit, and Area 514-1 Cold Vapor Evaporation Unit. All of these were reportedly operational during the inspection, except the Building 513 Shredding Unit.

The interim status units are subject to the requirements of an interim status document issued by the California Department of Health Services Toxic Substances Control Division (now DTSC) on 5/16/93, with revisions including a 12/21/92 revision and a 6/11/97 revision. Additionally, permit Part IV.5.(a) states "the Permittee shall follow all procedures described in the Waste Analysis Plan (WAP) contained in the approved Operation Plan for any waste managed in the units listed in...Part IV.3 of this permit." Accordingly, all of the currently authorized interim status units must meet the same WAP requirements as the permitted units.

The LLNL main site included numerous satellite accumulation areas (SAAs), as well as 19 (see Attachment N), 90 day generator storage areas (WAAs). Bulking and lab packing occurs in some of the 90 day generator storage areas. Note that the numbers and locations of the SAAs and WAAs can change. Also, note that LLNL personnel sometimes refer to the WAAs as CWAAs.

Regarding low level radioactive waste which contains non-RCRA hazardous constituents ("combined waste"), the 8/18/97 DTSC Memorandum of Understanding (MOU) states "DTSC agrees to refrain from taking enforcement with respect to the treatment, storage and disposal of combined waste streams...during the pendency of the negotiations of and MOA...". The MOU was extended and the MOA was not signed at the time of this inspection.

Inspected by: Michael R. James, Luz Castillo and Essam Eissa

Date of Inspection: June 20, 21, and 22, 2001

Type of Inspection: CEI ☒ CME ☐ O&M ☐ Focused ☐ Limited ☐

Facility Rep. Ms. Susi Jackson, ORAD Division Leader, was not at the facility during the three day site visit. However, she was at the facility during facility preparation of subsequent correspondence relating to the violations which were cited in the SOV (Attachment P), and she reviewed and signed the SOV (for fax transmittal of the SOV). The primary facility contact during the inspection was Ms. Kathy Pandrea, who was present and/or available during all three days of the site visit. Mr. Thom Kato was the primary facility contact for telephone communications regarding the finalization of the SOV during September 2001; Ms. Pandrea was on vacation at that time. Mr. Earl Thomas, Lab Pack Operations Team Leader for LLNL Hazardous Waste Management, was the key person for discussing and providing written information relating to the violations listed in the SOV. Numerous additional LLNL personnel were present during various portions of the three day site visit. Most of them are included in the attendee listings for the inspection opening conferences on 6/20/01 and 6/21/0 (Attachment Q).

Type of Business: State and Federal Government funded research lab

## II. CONSENT

Consent to conduct inspection that involves: taking photographs, reviewing and copying records, questioning personnel and inspecting hazardous waste handling areas.

Consent given by (name and title): Consent was given by Kathy Pandrea on 7/20/01 and 7/22/01, and by Stephanie Goodwin on 7/21/01. LLNL required that one

of their personnel take photographs rather than DTSC personnel (discussed below).

### III. DOCUMENTS REVIEWED

Note: I reviewed all of these records except for some records reviewed by Ms. Castillo and Mr. Eissa, as noted below. All of the records which were reviewed by Ms. Castillo and Mr. Eissa were reviewed at LLNL on 6/22/01. LLNL gave us copies of all the requested records to take with us, and most of the records review that I performed was done in my office after the site visit.

#### A. Permit and Interim Status Records

##### List of all wastes tracked in the Federal Facility Compliance Act (FFCA) Site Treatment Plan (STP)

A copy of the computer printout of the STP list was given to me at LLNL on 6/22/01: more than 100 pages (Attachment J). The listed STP items were grouped by a combination of Waste Stream Number (from the STP) and the time period during which the wastes first entered a permitted or interim status hazardous waste facility at LLNL. For example, one group was "LL-W010 FY99 Time Period".

During the site tour on the preceding two days, I randomly chose 22 containers of mixed hazardous waste with a "Rec'd." date greater than one year old on the label. These are listed in the table below, in the order that they were observed during the site tour. I originally intended to check the STP list to see if all of these were included. However, the groupings in the computer printout did not facilitate such a review of what appeared to be thousands of items. One problem was that a lot of the items were grouped in a "Pre 3/31/95 Time Period", which is a very large group of groups. So on 6/22/01 I asked for a computer check on whether the specific containers were listed on the STP. This report was delivered to DTSC approximately one week later (Attachment I). Note that the printed portion of Attachment I was the internal LLNL request to generate the information. The hand written portions constitute the results of the search; all of the items were reportedly on the STP.

Later in my office, Patricia Barni and I visually scanned the data groups in the computer printout of the STP list which was given to me on 6/22/01. Our scan confirmed that eighteen out of twenty two were listed in the STP. The computer printout of the STP list which was given to me at LLNL on 6/22/01 is included here as Attachment J. It might be decided to do a complete check of the 22 items below in the future.

LOCATION	CONTAINER #	"DATE REC'D"
612-5	Q42272*	5/20/99
"	Q34	5/12/94
"	Q24492	11/20/89
"	Q25664*	11/16/85
"	Q30310	8/15/96
"	Q20581*	4/13/85
"	Q26310	6/2/97
614E	R010664*	10/25/91
"	R010620*	12/13/90
612-100	R015094*	7/10/90
612-1	Q44686*	9/24/99
"	Q51830*	2/29/00
"	Q47451*	12/1/99
"	Q50142*	1/26/00
"	Q53688*	5/19/00

"	Q52023*	5/30/00
"	Q55292*	6/9/00
"	Q55282*	6/9/00
"	Q55273*	5/11/00
"	Q53673*	5/4/00
514-2	Q50792*	6/14/00
693	Q51833*	3/21/00

\* A visual scan of the computer printout of the STP list that was given to me at LLNL on 6/22/01 confirmed that these particular items (eighteen out of twenty two) were on the list. As this was a quick scan, the absence of confirmation of the other four does not indicate that they are not on the list as well. The visual scan was done to confirm that at least some of the items were on the list.

#### List of all onsite hazardous wastes stored longer than one year that are not in the STP

In response to my request for this information, LLNL gave me a copy of a letter from LLNL to DTSC dated 6/26/01. This letter stated that LLNL had done a thorough evaluation and determined that there were three containers of mixed hazardous waste that had been stored at either the permitted or interim status facilities for greater than one year. The letter included reasons that these were not on the STP, documented efforts to have these wastes accepted at permitted disposal facilities and discussed projected time lines for disposal. The letter requested DTSC authorization of continued storage of these three containers in the interim; however LLNL had reportedly received no DTSC response.

Waste Disposal Requisition records for hazardous wastes/ mixed wastes treated such they were designated non-hazardous/ combined waste or radioactive-only, for 5/1/01 to 6/20/01: I reviewed records for four containers of hazardous wastes which reportedly went from a mixed waste status to a radioactive-only status. I determined that none were RCRA listed wastes prior to treatment. Accordingly, I found no evidence that these should still have a mixed waste status. These were reportedly awaiting final waste analysis prior to being shipped offsite.

Waste Disposal Requisition form for hazardous wastes in Blend 01-08, which I observed in Tank Farm tank R5A5 during the site tour on 6/21/01- I reviewed the WDRs for ten of the reported 91 hazardous waste components in the blend. I found no violations.

#### Consolidation/ Lab Packing Records

a) Comprehensive Waste Management Report for Lab Pack #Q62620 (Sections #2 and #3 are included here as Attachment D)

This was provided at the site during records review on 6/22/01, in response to potential violations of the requirement that hazardous waste may not be stored at a WAA for greater than 90 days which were indicated by comparing "HWM Receival date" to "Workplace End Date" on lab pack labels which were observed during the site tour on 6/21/01 (discussed in Section IV below). This report included the following detailed reports which were pulled from the computer operating record:

1. "Hazardous Requisition Screen Dump Report"s ( SDRs) were provided for all four source containers (SCs) which contributed hazardous waste items to destination drum (DD) Q62620 in the permitted storage area. For each of the four SCs, the SDRs included the date the SC entered the permitted facility ("TSDF Date"), the work place start date (when the first hazardous waste item was put in the SC at the SAA and the workplace end date (when the container left the SAA with all of its listed items inside). "Transaction information" was included in each SDR, at the end of the detailed item listings for each SC. This provided the date that each item left the source container for a specified destination container (DC).

2. The "Container Transaction Query" for each SC included dates and locations for movement of the SC, including arrival at the initial WAA, possible transfer to another WAA, initial arrival at the permitted facility and possible movement to another location at the permitted facility. The "Container Transaction Query" also showed dates and locations where each item in a source container was unpacked ("UP") and put into another container.

3. The "Container Contents Report"s (CRs) for lab pack destination containers included "Workplace End Date" and "TSDF Start Date" for the items within the containers (listed as "W" items). The "Workplace End Date" was reportedly the earliest "Workplace End Date" for all of the items in a particular source container, and the report found no errors for "Workplace End Date" as observed on lab pack labels which were observed during the

site tour on 6/21/01. However, the CR included in the comprehensive report given to DTSC staff on 6/22/01 reported a different "TSDf Start Date" than the date that was observed on the label of Q62620 during the site tour on the previous day.

The Comprehensive Waste Management Report for Lab Pack #Q62620 showed that the operating record for a hazardous waste storage drum in the permitted facility can be complex. The hazardous waste in Q62620 came from four different SCs, and these four SCs contributed hazardous waste to 13 different DDs. The report states "container Q62620 was initiated as a labpack Destination Drum in the CWAA...". The initial hazardous waste items were transferred from two SCs to Q62620 in the CWAA (reportedly on 1/17/01), Q62620 (partially filled with these hazardous waste items) was then transferred to the permitted hazardous waste facility (reportedly on 1/17/01) and then additional hazardous waste items were transferred into Q62620 from two other SCs which had been transferred to the permitted facility earlier: 12/1/00 and 12/21/00.

The Comprehensive Waste Management Report for Lab Pack #Q62620 demonstrated that the "HWM Receival date" on the label of Q62620 which was observed during the site tour on 6/21/01 was incorrect. The observed label had the date that Q62620 (partially filled with hazardous waste items) was transferred to the permitted hazardous waste facility (1/17/01). The correct "HWM Receival date" was the date that the earliest hazardous waste subsequently transferred from a SC to Q62620, had previously arrived at the permitted facility: 12/1/00. The report established that the earlier indication of violation of the requirement that hazardous waste may not be stored at a WAA for greater than 90 days was eliminated due to the correction of the date and considerations of other details provided in the report, i.e., the correct "Workplace End Date" on the container label was associated with a hazardous waste item that had arrived at the hazardous waste facility on 12/1/00 rather than 1/17/01. The report went a step further than the 6/21/01 label observations; the report used information not provided on the label, to compare the "Workplace End Date" to the "TSDf Date" for all of the items/ groups of items that were in Q62620. Although the potential greater than 90 days violation was eliminated, a new hazardous waste container labeling violation was established: the incorrect "HWM Receival date" (See Attachment P). Fortunately, the discovery/ correction of the incorrect "HWM Receival date" did not result in identification of a violation of the one year permitted hazardous waste storage limit, i.e., although the hazardous waste had been stored in the permitted area longer than the label had indicated, the "corrected" permitted storage time was still much less than one year.

b) "Special Report" Computer Printout of "Building 693 Labpack Container Information" (Attachment E)

The 6/21/01 site tour identified 16 lab pack containers of hazardous waste where a violation of the 90 day WAA limit was apparent for one or more of the containerized hazardous waste items, from comparison "HWM Receival date" to "Workplace End Date" on the labels (See Section IV below). The comprehensive report ["a" above] provided detailed documentation of an incorrect "HWM Receival date" on the label of one of these 16 containers (Q62620). The Special Report (Attachment E) provided the result of the LLNL effort to ascertain the correct "TSDf Start Date" (same date as "HWM Receival date") for all 16 containers by producing and reviewing the types of reports provided in the comprehensive report (see Attachment D). Comprehensive data reports could have been provided for the other 15 lab pack containers; however, I did not request them. The following table compares the correct "TSDf Start Date"'s identified in the Special Report to the "HWM Receival Date"'s which were observed during the 6/21/01 site tour:

LAB PACK CONTAINER NUMBER	OBSERVED "HWM RECEIVAL DATE"	REPORTEDLY CORRECT DAT "TSDf START DATE"
Q63047*	3/21/01	2/16/01
Q31383	4/3/01	4/3/01
Q63059*	3/22/01	2/23/01
Q62560*	3/1/01	2/21/01
Q62488*	3/1/01	2/2/01
Q62556*	3/22/01	2/23/01
Q64138**	3/9/01	3/09/01
Q62629*	3/1/01	2/2/01
Q62620*	1/17/01	12/1/01
Q62565*	2/2/01	1/16/01

Q62484*	2/8/01	1/22/01
Q62518*	3/12/01	12/21/00
Q64174*	6/14/01	6/6/01
Q62482*	3/1/01	1/16/01
Q63056*	3/22/01	3/16/01
Q62605*	2/13/01	12/21/00
Q62530*	2/13/01	12/21/00

\* For these containers, the observed "HWM Receival date" was reportedly incorrect, i.e., there are different dates in the two columns above

\*\* This container was actually not an indicated WAA storage > 90 days during the 6/21/01 site tour and the "HWM Receival date" was reportedly correct. So it is not included in violation citations in the SOV (Attachment P).

As seen in the table above, 15 of the containers documented during the site tour on 6/21/01 were determined to have an incorrect "HWM Receival date" (including 62620). These 15 contributed to the total for a labeling violation that was cited. See ["c)"] below for documentation of additional violations of this type and the Summary of Violations (Attachment P) for the total labeling violation citation.

The "Special Report" (Attachment E) included a listing of all Source Container numbers for all the "Destination Drum" Labpack containers where a violation of the 90 day WAA limit was apparent for one or more of the containerized hazardous waste items on 6/21/01, with the "Work Place End Date"s listed for all of the Source Containers. The report listed a calculation of "Number of days in WAA" for the reportedly oldest Source Container, which was reportedly the correct "Number of days in WAA" for the corresponding Destination Container which was observed on 6/21/01. I checked all of the "Work Place End Date"s, and I determined that all of them except one were the same dates that I had observed on the container labels on 6/21/01. The exception was for Destination Container Q63056 (see last page of Attachment E), where the bold and the calculated 85 days indicated that 12/21/00 was the "Work Place End Date". There is actually an earlier date listed in Attachment E, which is the same date that I observed on the Source Container label on 6/21/01: 12/18/00. Correction of the "Work Place End Date" to 12/18/00 increases the "Number of days in WAA" from 85 to 88, which is still within the 90 day limit.

For all 15 of the Destination Containers where the "HWM Receival date" was corrected, the new date indicated that violation of the 90 day WAA limit had not occurred for any of the hazardous waste items in any of the Source Containers. However, the "HWM Receival date" for Q31383 which was observed on 6/21/01 was reportedly correct. Accordingly, all of the hazardous waste items in Source Container Q57756 which were placed in Destination Container Q31383 are determined to have a "Number of days in WAA" of 95 days (see second page of Attachment E). This violation is documented in the Summary of Violations (Attachment P).

For all 15 of the Destination Containers where the "HWM Receival date" was corrected, the new date is earlier than the date observed on 6/21/01, i.e., these containers were actually in the permitted hazardous waste facility for a longer time period than indicated by the labels. However, with the corrections, none of them were determined to have been stored in the permitted storage area beyond the one year limit.

#### c) Survey of All Lab Packs in the Permitted Hazardous Waste Facility

As discussed in "a)" above the Comprehensive Report for Lab Pack #Q62620 demonstrated that the "HWM Receival date" on the label of Q62620 which was observed during the site tour on 6/21/01 was incorrect. The observed label had the date that Q62620 (partially filled with hazardous waste items) was transferred to the permitted hazardous waste facility (1/17/01). The correct "HWM Receival date" was the date that the earliest hazardous waste subsequently transferred from a Source Container to Q62620, had previously arrived at the permitted facility. The Special Report [discussed in b) above] concluded that 14 out of another 15 selected Destination Container Lab Packs stored in the permitted facility on 6/21/01 also had incorrect "HWM Receival date"s. My criterion for selecting these particular lab pack containers was apparent storage greater than 90 days in WAAs for some of the hazardous waste items. However, my review of both the comprehensive report and the special report determined that the incorrect "HWM Receival date" occurrences were not dependent on container labeling information which indicated storage greater than 90 days.

concluded that there were probably other Destination Container lab packs with incorrect "HWM Receival date"s.

Further, the incorrect dates could have resulted in hazardous waste storage in the permitted facility greater than one year, or could cause such a permit violation in the future if uncorrected. Therefore, I asked Mr. Thomas to check these dates for all of the Destination Container Lab Packs stored in the permitted facility. He agreed to do this and provide a report documenting any labeling inaccuracies and labeling corrections, and including determinations on whether the one year limit had been exceeded for any containers with incorrect labels.

The survey report is included here as Attachment F. As documented in the 7/9/01 internal memorandum from Mr. Thomas (fourth page of Attachment F), the survey found 41 Destination Container Lab Packs stored in the permitted facility with incorrect "HWM Receival date"'s (this included the 15 containers identified in the Special Report discussed above). The survey further concluded that none of the hazardous waste containers with the incorrect dates had been stored in the permitted facility greater than one year. The survey report, for the survey completed on or before 7/5/01, included a description of corrective measures: correction of all of the incorrect labels and completion of corrective training for all of the key personnel by 7/5/01. These violations and their correction are documented in Summary of Violations (Attachment P).

d) "Container Contents Report"'s for 3/01 Lab Packing at the Permitted Facility

I reviewed 62 of these computer generated reports. For all of these I checked "TSDf Start Date" vs. "Workplace End Date" to determine whether some hazardous waste may have been stored at a WAA for greater than 90 days. For the purposes of my review, I assumed that the "Workplace End Date" was for the oldest waste item in the lab pack, i.e., the item which established the "TSDf Start Date". I further assumed that other items in the lab pack could have had later "Workplace End Date"'s. This was only a partial check on the 90 day storage limit for items in the lab pack, as in many cases there were items in the lab pack where the "Start Date" was more than 100 days later than the single "Workplace End Date" listed in the report, i.e., I would have needed to check the "Workplace End Date" vs. "Start Date" for every item in the lab pack to do a full determination on whether the 90 day storage limit had been met for every item in the lab pack. I decided not to request the additional information that would be needed to determine whether the 90 day storage limit had been met for every item in every lab pack.

For all of the lab packs, I compared "TSDf Start Date" to "Start Date"'s for the individual items, to see if "TSDf Start Date" was correct, and I checked "TSDf Start Date" vs. report date to see if (non-mixed) hazardous waste could have been stored at the permitted facility greater than one year. Finally, I did some random checks of container contents for compatibility.

During my initial review, I found the following indications of potential violations for 14 lab packs in two categories:

1) Nine of the reports showed an apparently late "TSDf Start Date", i.e., at least one of the listed contents had an earlier "Start Date" than the "TSDf Start Date". These were for destination containers Q: 63047, 63051, 63055, 63056, 62560, 63058, 63059, 61837 and 62551.

2) Five of the reports had an apparently incorrect "TSDf Start Date"/ the "TSDf Start Date" did not match any of the "Start Date"'s for the contents. These were for destination containers Q: 58705, 61734, 62644, 62583 and 62606. For the first four, comparison of the earliest "Start Date"(s) with the "Workplace End Date" indicated violation(s) of the requirement that hazardous waste may not be stored at a WAA for greater than 90 days.

On 7/18/01 at approximately 1440 hours I described these potential violations to Ms. Pandrea in a telephone conversation. As a result, LLNL prepared a report that was received by DTSC on 7/25/01. The report included approximately 115 pages, and only 14 pages are included here as Attachment G. Attachment G only includes the detailed computer data base information for one of the 14 lab packs: Q61837. (Note: Section #3/ Screen Dump Report for Q61837 could not be found in the original 7/25/01 submittal, so a faxed copy from Attachment H is included in Attachment G.)

The 7/20/01 LLNL internal memorandum (4th and 5th pages of Attachment G) summarizes the LLNL review for the 14 lab packs and concludes that the only violation was that the data base had an incorrect "TSDf Start Date" for Q61837. LLNL indicated that the reason for the incorrect "TSDf Start Date" was that Destination Container "Q61837 was a source container to which waste from other requisitions was subsequently added...(a) rarely employed work practice." My evaluation concluded that the problem was essentially the same problem that resulted in many or all of the violations indicated in "c)" above for the 41 Destination Container Lab Packs stored in the permitted facility with incorrect "HWM Receival date"'s. Q61837 was a Destination Container Lab Pack that was originally given a correct "TSDf Start Date", the date that the container with some final hazardous waste in it entered the permitted facility. The problem for Q61837 was that hazardous waste that had arrived at the permitted facility earlier than Q61837 was subsequently placed in Q61837 (see the Lab Pack Date QA sheet/ 7th page of Attachment G). When WDR# 203888 was placed in Q61837, the "TSDf Start Date" should have been changed to the date that WDR# 203888 arrived: 2/23/01. The "TSDf Start Date" was reportedly corrected in the data base. On 7/26/01, Mr. Thomas sent a fax (Attachment H) which concurred that the training discussed in "c)" above should prevent recurrence of this type of violation. This violation and its correction are documented in the Summary of Violations (Attachment P).



Regarding the 13 lab packs where the 7/25/01 LLNL submittal demonstrated that there were no violations, the reason was clarification of definition of the "Start Date"s which were listed for individual hazardous waste items in the Container Contents Reports. All of the potential Destination Container violations that I identified for these 13 lab packs resulted from apparent inconsistencies in comparing "TSDF Start Date" to "Start Date"s for the individual items. The 7/20/01 LLNL internal memorandum (4th and 5th pages of Attachment G) clarified that the "Start Date" for an individual hazardous waste item "only indicated the date that this item entered the permitted facility if the item entered the permitted facility in its original source container... a rarely employed work practice." The memorandum also states that (in the usual situation) where an item entered the permitted facility in a container other than its original source container, "default data" is entered...In instances where items were removed from their respective source containers in the CWAA, TWMS assigns the work place end date (WPED) as the 'start date'."

Regarding the Container Contents Reports, I concluded that the "Start Date"s for the individual items are of limited usefulness. As the memorandum states, this report "performs the primary function of supplying chemical inventory information to waste handlers and document reviewers." To check individual hazardous waste item Work Place End Dates and true "TSDF Start Dates" DTSC inspectors should ask for special computer reports similar to the report included here as Attachment E. The inspector should ask for a report with all of the "TSDF Start Date"s, not just the date for the "container with the oldest 'workplace end date'" (Attachment E/ discussed in first/ cover page). This would allow the inspector to check the "number of days in WAA" for all of the items.

#### Storage Records (hazardous wastes at permitted and interim status storage locations)

During the opening conference on 6/20/01, I gave LLNL personnel a draft list of records that I wanted to review during the inspection. I requested hazardous waste storage records for the currently active permitted and interim status hazardous waste facilities. These facilities are described in Section I above/ Regulatory Status. LLNL provided some of these records for the site tour on 6/20/01. On this day, Ms. Castillo and Mr. Eissa began checking the computer records which had been provided vs. the hazardous waste and mixed hazardous waste storage containers which were observed. They found several discrepancies. For example, in the Building 513 Container Storage Unit the following hazardous waste containers which were observed were not on the list: Q43514, Q26240, Q56317 and Q39582. Other containers which were observed in other hazardous waste storage areas but not listed for those areas included Q57119, Q56958, and Q58954. Five pages of a 6/20/01 inventory with Ms. Castillo's hand written notes regarding discrepancies are included here as Attachment K.

The discrepancies for various hazardous waste storage areas were pointed out to Mr. Morris and other LLNL personnel on 6/20/01. Later they indicated that the discrepancies were due to the fact that the lists that were given to DTSC (portions shown in Attachment K) were modified from the original computer records to delete radioactive-only waste containers (not regulated by DTSC) that were stored in these areas. They indicated that this attempt to assist in the DTSC inspection resulted in the discrepancies which were found. After receiving this response, I requested accurate records. LLNL did not provide this set of records until the closeout meeting on the next day. This set of records was an unsigned and mostly undated hand talley (Attachment L). When this hand talley was given to me on 6/22/01, Ms. Goodwin stated that a hand talley was done to make sure that the records were accurate and that this type of talley was routinely done by LLNL from time to time. I was surprised that the records were done by hand. However, as I received these records at the planned end of the inspection day I decided to not discuss them further at that time.

During a telephone discussion on 7/6/01, LLNL agreed to provide a more complete set of electronically generated records for the hazardous waste and mixed waste storage for the B-514 area than the records that were given to us during the site visit. These were received by mail on 7/13/01 and were dated 7/5/01 (Attachment M). As I had requested, the 7/13/01 submittal included a discussion of a comparison between the electronic records and the hand talley which was received on 6/22/01 (first page of Attachment M). The discussion indicated that there were no inaccuracies in the 7/5/01 electronic operating record for the B-514 area.

I noted that my draft list of records that I gave LLNL personnel on 6/20/01 did not specifically ask for the "operating record" hazardous waste storage records. In consideration of this and other factors including different dates for different records sets, I decided not to cite operating records violations for the discrepancies that were noted during the site tour on 6/21/01. Further, I found no specific reference to how records should be kept in the permit or the interim status document. Cal. Code Regs. Sections 66264.73 and 66265.73 require "a written operating record" for permitted and interim status hazardous waste facilities respectively for items including "the location of each hazardous waste within the facility and the quantity at each location." I decided to not initiate a detailed investigation during this inspection, regarding the adequacy of electronic records in satisfying these requirements for "written" hazardous waste storage records.

Inspection records for all permitted and interim status hazardous waste container storage and tank storage areas for 3/01



I reviewed the following inspection sheets for the hazardous/ mixed waste treatment and storage units listed in Section I/ Regulatory Status above: Weekly Inspection Log for Area 612 Facility Storage Units, Daily Inspection Log for 612 Facility, Weekly Inspection Log for Building 693 Facility Storage Units, Daily Inspection Log for Building 693 Facility, Weekly Inspection Log for Building 233 Facility Storage Units, Weekly Inspection Log for Area 514 Facility Storage Units and Daily Inspection Log for Area 514 Hazardous Waste Treatment and Storage Tanks. I found no violations.

#### Waste minimization certification due 3/1/01, for 2000

This was reviewed by Mr. Eissa. No violations were found.

#### Training Records

I reviewed training records for the following personnel who reportedly inspected permitted and interim status hazardous waste management facilities: Roy Warner (Material Storage Technician), Donald Thomas (Storage Technician), Gary Garcia (Area 612 Storage Technician) and Doug Villela (Area 612 Storage Technician). I compared the training records with the required training listed in the Part B and found no violations.

#### B. Generator Records

##### Manifests for 3/01

These were reviewed by Ms. Castillo and Mr. Eissa. On 6/22/01 they asked for waste profile information for specific hazardous waste items which were listed on Manifest #99555437. This information was delivered to our office later, and I reviewed it. No violations were found.

##### Training records

I reviewed training records for the following personnel who reportedly inspected 90 day generator hazardous waste storage areas: Timothy Andrews, Green Glenn, Perry Dennington, Lisa Lauderbach, Amelia Kirch, Russ Ratti, Rob Tageson, Kathy Tucker, Joe Salazar and John Ulrech. I found no violations.

##### Hazardous waste determinations for samples collected 5/01

I reviewed the reports for 12 of the reportedly 38 hazardous waste determination samples which were collected. I found no hazardous waste determination violations.

##### Inspection records for generator hazardous waste storage locations for 3/01

Ms. Castillo and Mr. Eissa reviewed the weekly inspection records for the twenty WAAs which are listed in Attachment N. No violations were found.

#### Treatability Studies

I reviewed the Annual Report to DTSC for Calendar Year 2000 for treatability studies, dated 3/14/01. The only study which was listed was a direct chemical oxidation treatability study for mixed radioactive chlorinated solvent wastes. Reportedly, less than seven pounds of these wastes were treated in the study during the year. This is reportedly an ongoing study. I found no violations.

#### Hazardous Waste Transporter Registration

I reviewed a copy of the registration with an expiration date of 11/30/01.

## **IV. NARRATIVE OF OBSERVATIONS/DISCUSSION WITH OPERATOR**

#### Opening Conference on 6/20/01

I held an opening conference at approximately 1020 hours. The attendees are listed on the sign-in sheet (first page of Attachment Q). I explained the inspection process and discussed my overall plan for conducting the inspection. I stated that I would not be inspecting low level radioactive waste which contains non-RCRA hazardous constituents ("combined waste") management, as DTSC had agreed to refrain from taking enforcement with respect to the treatment, storage and disposal of combined waste streams pending the signing of a MOA (discussed in Section I/ "Regulatory Status" above). I asked for permission to conduct the inspection, and Ms. Pandrea gave me permission. However, she stated that LLNL required that one of their personnel take

photographs rather than DTSC personnel. (Frank Nunez, a LLNL photographer, accompanied us on the entire site tour later on this day and on the next day. However, I never requested that any photographs be taken.)

I gave LLNL a tentative list of records that I wanted to review. This included some records that I wanted as soon as possible for the site tour, and other records that I did not plan to review until the site tour was completed. To refine my plan for the site tour, I asked LLNL personnel to clarify the status for all of the permitted and interim status hazardous waste and mixed waste units. I also asked some questions about the generator storage locations, including satellite accumulation areas and 90 day storage areas. We agreed to begin the site tour after lunch.

#### General Site Inspection Comments and Discussion

The site inspection occurred on 6/20/01 through 6/22/01. Ms. Castillo and Mr. Eissa were present all three days. Only records review and discussions occurred on the third day. By 6/22/01 LLNL gave us copies of all the requested records to take with us, and most of the records review that I performed was done in my office after the site visit. I also clarified some issues and obtained additional records as a result of telephone communications with LLNL staff after the site visit.

For this inspection, I decided to visually inspect only the currently active permitted and interim status hazardous waste facilities. These are described in Section I above/ Regulatory Status. All of the visual hazardous waste/ mixed waste facilities inspections occurred on the first two days of the site visit. On these two days, Mr. Jessen accompanied us to assure protection from possible radioactive hazards. His report (Attachment O) documents his activities and documents that the monitoring instruments indicated that all of us had low radioactive exposures during the inspection.

On 6/20-21/01, we inspected all of the currently active permitted and interim status hazardous waste facilities which are described in Section I above/ Regulatory Status, with the exception that some areas could not be visually observed by DTSC staff due to measured radioactivity levels greater than allowed by DTSC policy (Attachment O). All of the hazardous waste/ mixed waste storage that I observed appeared to be well managed. Hazardous waste containers appeared to be clean and in good condition. I found no evidence of spillage. I observed adequate aisle space and acceptable stacking, and I observed that all hazardous waste/ mixed waste containers were labeled. I observed adequate fire extinguishers, spill cleanup material, eye washes and safety showers. Some of the eye washes and safety showers were tested at my request, and all of them were observed to perform satisfactorily.

I inspected numerous hazardous waste container labels in all of the permitted and interim status areas. I did random checks of "Workplace Start Date" vs. "Workplace End Date" to determine whether the labels indicated that hazardous waste containers had been stored in a satellite accumulation area (SAA) greater than one year or a 90 day generator storage area greater than 90 days. I also compared the "HWM Receipt" dates to the current date to determine whether hazardous waste had been stored in the permitted or interim status storage areas for greater than one year. I noted numerous instances where mixed hazardous waste had been stored in the permitted or interim status storage areas for greater than one year, and I recorded the information from some of these labels for a later check to determine whether they were listed on the Federal Facility Compliance Act (FFCA) Site Treatment Plan (see Section III/ Permit and Interim Status Records above).

Specific comments for these different types of observations are presented below only as they pertain to noteworthy issues that arose.

#### Site Inspection on 6/20/01

The site inspection began at approximately 1320 hours. LLNL provided some of the hazardous waste storage records at the beginning of the site tour. On this day, Ms. Castillo and Mr. Eissa began checking the computer records which had been provided vs. the hazardous waste and mixed hazardous waste storage containers which were observed. They found several discrepancies. This initiated the generation of additional records and discussions described in Section III above under "Storage Records (hazardous wastes at permitted and interim status storage locations)".

#### Opening Conference on 6/21/01

I held an opening conference at approximately 1020 hours. The attendees are listed on the sign-in sheet (second page of Attachment Q). Ms. Goodwin gave me permission to continue the inspection. I discussed some of the problems with the records that had occurred on the previous day (see Section III above under "Storage Records (hazardous wastes at permitted and interim status storage locations)").

#### Site Inspection on 6/21/01

The site inspection began at approximately 0930 hours. On this day we observed additional problems with the records (see Section III above under "Storage Records (hazardous wastes at permitted and interim status storage locations)"). On this day checks of "Workplace Start Date" vs. "Workplace End Date" indicated that hazardous waste containers had been stored 90 day generator storage areas greater than 90 days for 16 hazardous waste lab pack containers. This initiated the generation of additional records and discussions described in Section III above under "Consolidation/ Lab Packing Records". Some violation determinations resulted for these and additional hazardous waste containers (see Attachment P).

#### Closeout Meeting on 6/21/01

I discussed potential violations where checks of "Workplace Start Date" vs. "Workplace End Date" indicated that hazardous waste containers had been stored in 90 day generator storage areas greater than 90 days. Mr. Thomas presented the LLNL Comprehensive Report for Q62620 (Attachment D has sections #2 and #3 only). I stated that the report indicated that there were some violations, and that I would review the information further prior to making violation determinations.

LLNL provided hazardous waste storage records in the form of a hand tally (Attachment L). A hand tally was unexpected at that time. However, as I received these detailed records at the planned end of the inspection day, I decided to not discuss them further at that time. These records are discussed in section III above: "Storage Records (hazardous wastes at permitted and interim status storage locations)".

#### Records Review and Closeout Meeting on 6/22/01

The records review is discussed in the "Documents Reviewed" section above. The attendees in the closeout meeting included Ms. Goodwin, Ms. Pandrea, and Mr. Morris. I described all of the potential violations that I had found. I did not issue a summary of violations at that time due to unresolved issues regarding those potential violations. Also, much of the records review was not completed at that time. LLNL provided copies of all the requested records to take with us, and most of the records review that I performed was done in my office after the site visit. LLNL agreed to provide additional information to resolve the potential violations.

#### Telephone Communication with Kathy Pandrea at approximately 1500 hours on 6/29/01

We discussed the hazardous waste storage records that LLNL had unexpectedly provided in the form of hand tallies (Attachment L). I said only one of the tallies had initials, some had dates and some did not. I told her that I would be careful about how I asked for hazardous waste storage records in future inspections. I said that computer operating records were probably acceptable; however, LLNL should be able to provide them quickly.

I discussed additional information that I wanted regarding incorrect work place end dates on lab packs in permitted hazardous waste storage units. This resulted from LLNL's investigation of my checks of "Workplace Start Date" vs. "Workplace End Date" which indicated that hazardous waste containers had been stored in 90 day generator storage areas greater than 90 days for 16 hazardous waste lab pack containers. The LLNL conclusion was that in all but one instance the problem was an incorrect work place end date rather than a greater than 90 day generator storage violation.

I stated that LLNL's reports seemed to indicate that there were a lot of other lab packs with incorrect work place end dates. Ms. Pandrea agreed to ask Mr. Thomas to investigate this.

#### Conference Call with LLNL personnel at approximately 1415 hours on 7/6/01

The following people were reportedly in attendance: Ms. Jackson, Stephanie Goodwin, Tom Kato, Ms. Pandrea, Ms. Salvo, Mr. Thomas, Mr. Morris and Mr. Cerruti. The following issues were discussed:

a) Incorrect Work Place End Dates on Lab Packs in Permitted Hazardous Waste Storage Units: Mr. Thomas answered my questions regarding this issue. He said that, in response to my concerns he had started an assessment of lab pack permitted storage start dates on 6/29/01. He said that of the 143 lab packs that were reviewed, 41 incorrect container label dates were found. He agreed to send a written report of these activities. (This was received later: Attachment F.) I commented that the "Building 693 Labpack Container Information" report included in the information that was hand delivered to DTSC on 6/28/01 was a useful format. He stated that this was a special spreadsheet.

b) Possible Incorrect Work Place End Dates On Containers of Bulk Consolidated Hazardous Waste in Permitted Hazardous Waste Storage Units: I expressed a concern that containers of consolidated hazardous waste in the permitted storage units might have the same type of permitted storage start date problems that had been documented for the lab packs. Mr. Thomas explained that all of the bulk consolidation occurred at the SAAs, so that similar problems would not be expected.

c) Operating Records: I asked about the fact that a hand tally had been provided at the end of the day on

6/22/01, when I expected a computer printout. Ms. Goodwin explained that they had concluded that this was the best way to give us an accurate tally of hazardous wastes and mixed wastes in the interim status hazardous waste storage areas without including the numerous containers of radioactive wastes. She agreed to send out computer records as of 7/5/01 including the radioactive waste containers, with a listing of eleven containers which had been treated since the hand tally. She said that no containers had been added since the hand tally. I asked if the computer records as of 7/5/01 would include any corrections based upon comparing the hand tally with the computer records. Mr. Morris said that they had found a two container discrepancy and that he would provide a written report for this. This report was received on 7/13/01 (Attachment M).

#### Telephone Communication with Kathy Pandrea at approximately 1400 hours on 8/9/01

We discussed the status of my violation determinations and the SOV that I would be sending. I said that I had not determined any violations that I had not previously discussed with LLNL. However, I said that there was an unresolved issue regarding the violation determinations that I had discussed with her previously. Regarding the 41 incorrect hazardous waste container labels (Attachment F), I needed to know whether any or all of these container labeling violations corresponded with operating record violations, i.e., incorrect permitted hazardous waste storage start dates in the operating record. I requested a written response on this issue.

#### Telephone Communications with Mr. Kato on approximately 9/5-7/01

Mr. Kato said that he was calling rather than Ms. Pandrea, because she was on vacation. He asked about the pending SOV. I said that I intended to complete the SOV soon. However, there was still the same unresolved issue regarding the violation determinations that I last discussed with Ms. Pandrea on 8/9/01. If that issue was not resolved soon, I would probably list it as an unresolved issue in the SOV. Mr. Kato investigated this issue and informed me that the issue had not been addressed in Ms. Pandrea's absence due to a voice mail problem with a message that she left Mr. Thomas regarding this issue. He said that he would try to resolve it as soon as possible.

#### Telephone Communications with Mr. Kato on 9/12/01

I telephoned Mr. Kato to accomplish LLNL signing of the SOV (Attachment P) by fax exchange on this day. Mr. Kato indicated that LLNL could probably resolve the violations issue soon. He asked me if I preferred to hold up the SOV until they sent me something in writing on the unresolved violation issue. I said that I would prefer to finalize the SOV in its current state. LLNL obliged by faxing back a signed copy later that day.

## V. VIOLATIONS

A Summary of Violations (SOV) is attached (Attachment P).

The SOV, dated 9/12/01, included an "Unresolved Issue" discussion for "Section II: Other Violations"/ violation no. 2 in the SOV (see "Unresolved Issue" on p. 6 of Attachment P). On 10/10/01, the DTSC Statewide Compliance Branch received a LLNL submittal (dated 9/20/01) which resolved the subject issue (Attachment R).

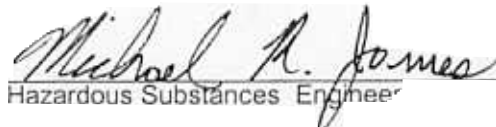
Apparently LLNL did not correctly interpret the "Unresolved Issue" discussion for "Section II: Other Violations"/ violation no. 2 in the SOV. The discussion of possible reclassification to "minor" violations in the "Unresolved Issue" discussion in the SOV only applied to Cal. Code Regs. section 66264.73(b)(1) and only applied to Q61837, as stated. LLNL's request in their submittal dated 9/20/01 to "consider the second and third alleged violations as 'minor' violations" is accordingly denied for the "second" violation, i.e., "Section II: Other Violations"/ violation no. 1 in the SOV will remain as "Section II: Other Violations".

However, "Section II: Other Violations"/ violation no. 2 in the SOV is hereby reclassified to a minor violation. This is due to the fact that the LLNL submittal dated 9/20/01 (Attachment R) reported that only one hazardous waste container in addition to Q61837 "had incorrect Workplace End Date and/or TSDF Start Date information" in the operating record: container Q62530. Accordingly container Q62530 is hereby included with Q61837 in the SOV violation citation for "Inaccurate storage date in the operating record": "Section II: Other Violations"/ violation no. 2 in the SOV (Attachment P). Again, "Section II: Other Violations"/ violation no. 2 in the SOV is hereby reclassified to a minor violation; the added operating record violation for Q62530 is a minor violation.

The LLNL submittal dated 9/20/01 (Attachment R) reports "The discrepant storage date information was corrected...at the time of discovery" for Q62530.

## VI. ATTACHMENTS

- A. Permit Table 1
- B. LLNL letter dated 4/13/01, for removal of Building 280 from the permit
- C. LLNL letter dated 6/16/00, for notification of Class 1 permit modifications
- D. LLNL Comprehensive Report for Q62620: sections #2 and #3 only
- E. LLNL Special Report for Building 693 Labpack Containers (final portion received 7/5/01)
- F. LLNL report dated 7/9/01, titled "Lab Pack Container Labels (Final DTSC Report)"
- G. LLNL report for 14 hazardous waste containers, dated 7/23/01
- H. LLNL faxed report dated 7/26/01 (four pages)
- I. LLNL STP search for 22 containers dated 6/22/01 (one page)
- J. Complete LLNL STP list
- K. Pages 1, 2, 23, 27, 28, and 32 of 6/20/01 LLNL hazardous waste container inventory
- L. LLNL container inventory done by hand on 6/22/01, and possibly 6/21/01
- M. LLNL B-514 areas hazardous waste storage records for 7/5/01, with cover memo
- N. LLNL WAA list
- O. DTSC Memorandum from Alan Jessen to Mike James, dated 7/6/01
- P. Summary of Violations dated 9/12/01
- Q. Attendee listings for inspection opening conferences on 6/20/01 and 6/21/01
- R. LLNL letter dated 9/20/01, for "Response to Summary of Violations CEI Report"

  
Hazardous Substances Engineer

11/2/01  
Date